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ABSTRACT

Previous researchers have presented conflicting data about the effects of nurturance and nurturance withdrawal on resistance to temptation among young girls. Age differences between the samples may have produced the conflicting experimental findings. In order to test this assertion, four-, six-, and eight-year-old female children were randomly assigned to either a nurturance or a nurturance withdrawal treatment which immediately preceded a resistance to temptation situation. Four-year-old girls in the nurturance condition deviated more in the temptation situation, but six-year-old girls in the nurturance condition deviated less. Nurturance and nurturance withdrawal did not differentially affect eight-year-olds, who deviated less than the younger children. (Author)

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NURTURANCE, NURTURANCE WITHDRAWAL, AND RESISTANCE TO TEMPTATION AMONG THREE AGE GROUPS

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Burton, Allinsmith, and Maccoby (1966) and Parke (1967) have investigated the effects of continuous nurturance and nurturance withdrawal on resistance to temptation among children. Using the research and theory of Hartup (1958) as a basis, they hypothesized that withdrawal of attention by a formerly nurturant experimenter would arouse dependency anxiety which would mediate the motive to re-establish a nurturant relationship with the experimenter. In a temptation situation, the dependency anxiety following nurturance withdrawal should cause the child to conform to the rules and resist temptation in order to avoid or escape the anxiety. This paradigm proposed by Hartup seems to be basically a case of avoidance learning with conformity as the instrumental response to avoid the elicited anxiety.

The results of the Burton, et. al., experiment were discrepant with both the above theory and the results of the Parke investigation. Burton found that nurturance withdrawal, as opposed to nurturance, was followed by increased cheating for boys and that it had relatively little effect on the resistance to deviation among girls. However, in accordance with the theory, Parke found that subjects in the nurturance withdrawal condition deviated less than subjects in the nurturance treatment. Parke also found the nurturance manipulation affected girls more than boys. Parke accounts for the discrepancy between the two experiments primarily in terms of the task employed. He maintained that the bean bag task used by Burton, et. al., involved a great deal of achievement motivation and, therefore, this procedure was confounded by achievement motivation. While focusing on the achievement motivation, Parke may have underestimated the importance of age differences in accounting for the discrepancy. The children in Parke's experiment were ages 6.6 and 7.8 years respectively, but the children used by Burton, et. al., were age four.

This experiment focused upon age differences in resistance to temptation following nurturance and nurturance withdrawal. It was postulated that the discrepancy between the two experiments cited above can best be explained because of the age differences in the two samples. First, it was predicted that older children will be more able to resist temptation because of a longer and more extensive history of reinforcement following conformity to adult requests. In addition, it is postulated that older children will be more likely to understand that anxiety can be removed or avoided by appropriate instrumental behavior, i. e., avoidance or escape learning. In order to test the above predictions, Parke's basic methodology was employed with the three age groups. Only females were used because Parke found that the nurturance operations affected girls more than boys.

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METHOD

An attempt was made to follow the procedure of Parke (1967) as closely as possible. Subjects in each age level were randomly assigned to either the nurturance or nurturance withdrawal groups. A female assistant was the adult in each of the treatment conditions. A second timekeeper assistant was employed for twenty-two subjects to determine the reliability of scoring. Scores used were the number of times a child touched the toys and the amount of seconds the child played with each toy.

Subjects

Twenty preschool children (mean age 4.6 years), twenty kindergarten students (mean age 6.1 years), and twenty second graders (mean age 8.5 years), were selected from the Brigham Young University Laboratory School and an elementary school in Provo, Utah. Only female children were selected. Jensen (1961), using the Index of Status Characteristics (Warner, Meeks, and Eells, 1949), found that both the laboratory and elementary school pupils belonged to the upper-middle class. Children in each grade level were randomly assigned to either a nurturance or a nurturance withdrawal treatment group.

Materials

The subjects were tested in an experimental room with one-way observing glass at the Brigham Young University Nursery School. In one corner of the experimental room was a table on which were placed colored drawing paper, a box of crayons, and a set of colored pastels. The female assistant interacted with the subjects at this table during nurturance conditions. Three feet away from the drawing table in the center of the room was a second table on which several toys were placed. The small experimental room used for this experiment was produced by arranging folding floor-to-ceiling partitions in a larger room in the Laboratory School. It was not possible to locate adequate facilities which would have been equally unfamiliar to each age group. The room was probably a little more familiar for the four-year-old children than the other age groups; however, the four-year-olds had never been in the small room as it was constructed, decorated, and staffed. None of the children in any of the age groups had seen the female assistant prior to the experiment. The experiment appeared to be a novel experience for all of the age groups.

The toys were arranged in three rows on the table in such a manner that the child could reach the first row by sitting on the chair, could reach the second row only by standing up, and could reach the third row only by moving around the table. Prior to the experiment, a pilot study was conducted to determine, by parental rating, the amount of like and dislike the child felt for several kinds of toys. The toys were then ranked as to attractiveness and selected separately for each age group. The selected toys were covered by a dark brown cloth during the first ten minutes of the experimental session. The most preferred toys were placed on the third row, the intermediate in the second row, and the least preferred toys in the row next to the child.

Manipulations

Continuous nurturance.--For the children in this condition, the E said, "How would you like to sit down here with me and we will draw anything you feel like? There are a lot of colorful drawing papers and plenty of colored chalk and crayons, and you can pick your choice of anything." Meanwhile, the female assistant asked them friendly questions and encouraged them in their work. The questions included, "How many brothers and sisters do you have?", "What is your favorite color?", etc. The period of continuous nurturance lasted ten minutes.

Nurturance withdrawal.--The female assistant followed the same procedure as in the continuous nurturance condition, but only for five minutes. The nurturance condition was followed immediately by five minutes of nurturance withdrawal in which the female assistant walked to the opposite side of the room and sat with her back toward the child. She ignored every attempt of the child to interact with her. This period of nurturance withdrawal lasted five nimutes for a total time of ten minutes.

After the ten minutes of either continuous nurturance or nurturance withdrawal, the female assistant told the child, "You can sit here," pointing to the chair by the side of the toy table. She removed the cloth from the toys and said, "These toys are arranged here for someone else, so you'd better not touch them. If you are a good girl and do not touch these toys, then when I come back I will bring you something. While I am gone, you can look at this book (University of Chicago Graduate School Catalogue). I will close the door and no one will come in except me. When I come, I will knock on the door, so you know it is me."

The female assistant then left the room and the child was alone with the toys for a period of fifteen minutes. When this period of fifteen minutes was finished, the female assistant re-entered the way she had indicated she would, and presented the child with a handful of candy for cooperating.

In order to check the adequacy of the randomization procedure, behavioral observations were made during the nurturance and nurturance withdrawal period. The two treatment groups and each age level were scored separately and analyzed by means of a chi-square analysis. There were no significant differences between any of the groups on their amount of verbal communication, cooperation level, and dependency or independency toward the E during the nurturance and nurturance withdrawal portion of the treatment conditions.

Measurement

During the fifteen minutes of resistance to temptation, a record was kept of each time the child touched the toys. This sheet was designed in such a manner that the researcher could record the seconds in which each child deviated toward each row of toys. There was one record sheet per subject. From the observer's record, the following raw scores were calculated:

1. The latency of the subject's first deviant response, defined as elapsed time before touching any of the toys.
2. The number of times the subject deviated toward each toy.
3. Total seconds for which the subject deviated toward each toy.

For reliability check, a Pearson product-memont correlation coefficient was computed between the scorings of the principal investigator and the second scorer. A correlation of 1.00 was obtained for the total number of deviations, and a correlation of .98 was obtained for the total seconds of deviation. Scores for the number of deviations and total seconds of deviation were not weighted (multiplied by the row number of the toy touched) because an inspection of a study by Parke (1967) showed an extremely high correspondence between weighted and unweighted scores.

RESULTS

The three dependent measures, latency, number of deviation, and seconds of deviation, were analyzed with a 3 x 2 analysis of variance. The first variable was the three age groups and the second variable was the nurturance and nurturance withdrawal treatments. No significant main or interaction effects were found on the latency measure. The analysis for the total seconds of deviations is presented on Table 1. There was a significant age effect, but also an interaction. In order to examine this interaction, Duncan's Multiple Range Statistic was computed. Table 2 presents the Duncan's analysis and the means are plotted in Figure 1.

TABLE 1

ANALYSIS OF VARIANCE SUMMARY FOR THE SECONDS OF DEVIATION

Source of Variation	Degrees of Freedom	Mean Square	F Ratio
Age (A)	2	63410.14	3.9808*
Exp. Group (B)	1	3182.81	0.1998
Interaction (AB)	2	94672.31	5.9433**
Error	54	15928.99	

* Significant at .05 level of significance

** Significant at .01 level of significance

TABLE 2

DUNCAN'S MULTIPLE RANGE STATISTIC FOR SECONDS OF DEVIATION

GROUPS MS = 15,928,99 N = 60	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	$\bar{X}_4$	$\bar{X}_5$	$\bar{X}_6$
$\bar{X}_1$ = 30.40 Age 8, NW	0.00	57.90	67.80	75.10	<u>192.70</u>	<u>199.60</u>
$\bar{X}_2$ = 88.30 Age 6, N		0.00	9.90	17.20	<u>134.80</u>	<u>141.70</u>
$\bar{X}_3$ = 98.20 Age 8, N			0.00	7.30	<u>124.90</u>	<u>131.80</u>
$\bar{X}_4$ = 105.50 Age 4, NW				0.00	<u>117.60</u>	<u>124.50</u>
$\bar{X}_5$ = 223.10 Age 4, N					0.00	6.90
$\bar{X}_6$ = 230.00 Age 4, NW						0.00

Underlined significant at .05 significance level.

Inspection of Table 2 and Figure 1 will show that the interaction resulted primarily because the four-year-olds responded to the two treatments in an opposite manner from that of the six-year-olds. Four-year-olds in the nurturance treatment deviated for a total of 223.10 seconds while those in the nurturance withdrawal treatment deviated only 105.50 seconds of deviation. Six-year-olds in the nurturance treatment deviated for 88.30 seconds and those in the nurturance withdrawal deviated for 230.00 seconds. Table 2 shows that the nurturance and nurturance withdrawal conditions did not differentially affect the performance for the eight-year-olds. The eight-year-olds had fewer seconds of deviation than the six-year-olds and four-year-olds. The third performance measure, total number of deviations, shows the same general pattern. However, the analysis of variance for the number of deviations, Table 3, shows only a significant age effect. The means for this measure are plotted in Figure 2 and they show the same tendency of four-year-old subjects in the nurturance condition to deviate more while six-year-olds in the nurturance condition deviate less as compared to nurturance withdrawal conditions.

There is also a decline in deviations with age, with the largest difference occurring between the six- and eight-year-olds. Separate analyses were also made for each toy but the results were basically the same as when the toys were combined.

TABLE 3

ANALYSIS OF VARIANCE SUMMARY FOR THE NUMBER OF DEVIATIONS

Source of Variation	Degrees of Freedom	Mean Square	F Ratio
Age (A)	2	558.61	7.4337**
Exp. Group (B)	1	98.81	1.3149
Interaction (AB)	2	209.51	2.7881
Error	54	75.14	

** Significant at .01 level of significance

DISCUSSION

The most important finding in this experiment seems to be the interaction between age and type of treatment. The interaction suggests that the motivation to resist temptation is different between the age groups. The results of this investigation are just the opposite of both Burton's, et. al., and Parke's. Parke found less deviation among six-year-olds and seven-year-olds following nurturance withdrawal but we found more than in the nurturance conditions for the six-year-old age group. Burton, et. al., found no difference between nurturance and nurturance withdrawal for four-year-old girls, but we found that following nurturance withdrawal such girls deviated less.

The explanation advanced by Burton, et. al., and Parke that nurturance withdrawal will create anxiety which is reduced by conformity to rules does not account for the opposite findings among the six-year-olds in this experiment. From the data in this experiment, it is reasoned that four-year-olds may be resisting temptation to avoid anxiety but that six-year-olds may resist temptation for other reasons. Since a nurturant adult produces the most resistance to temptation, it may be that the reinforcing properties of the nurturant adult are stronger than that of the nurturance withdrawal teacher. At least one researcher (Siegel and Andrews, 1966) found that for children, a stronger reinforcer affects

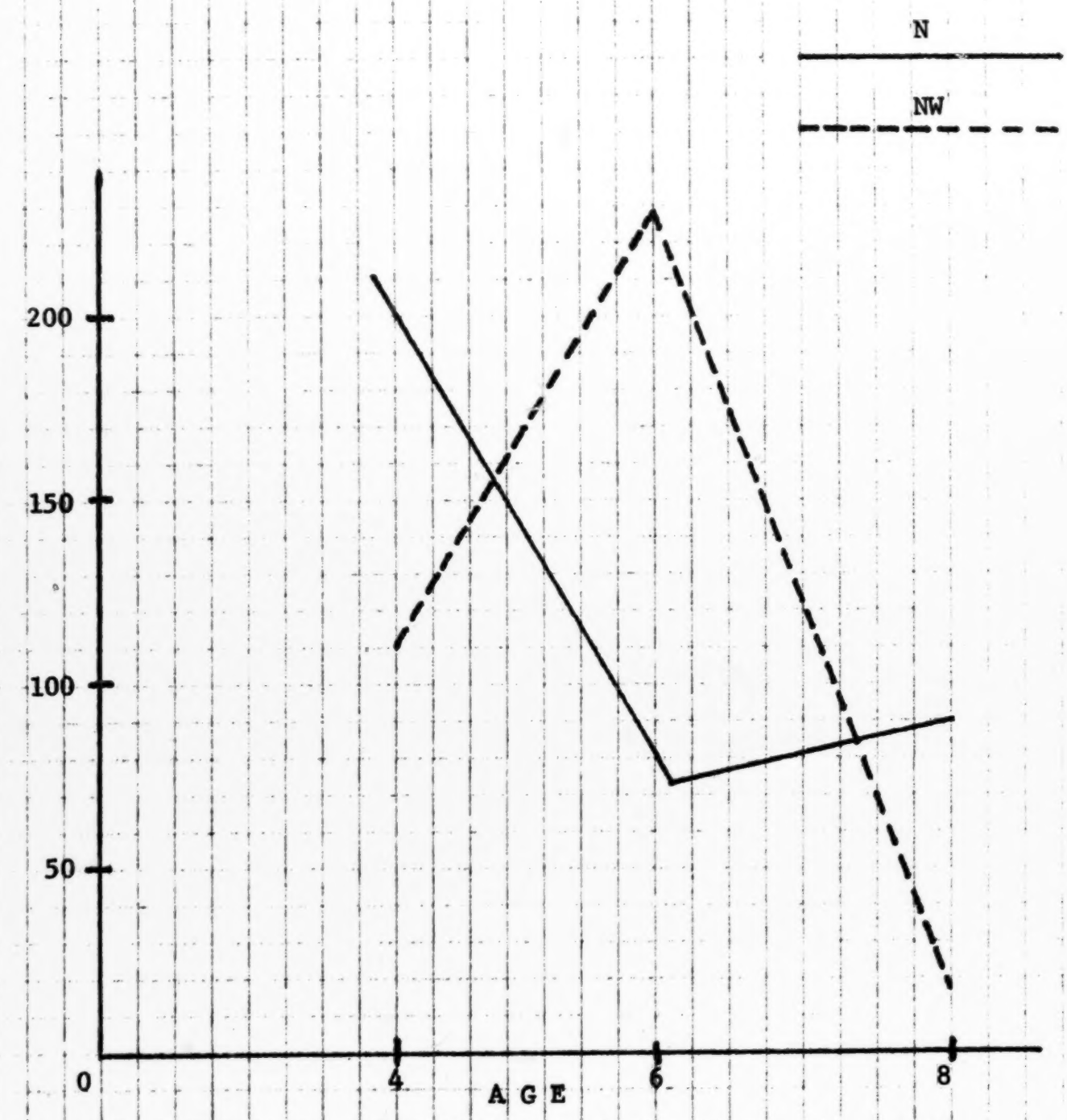

FIGURE 1. SECONDS OF DEVIATION FOR THE THREE AGE GROUPS AND TWO TREATMENTS

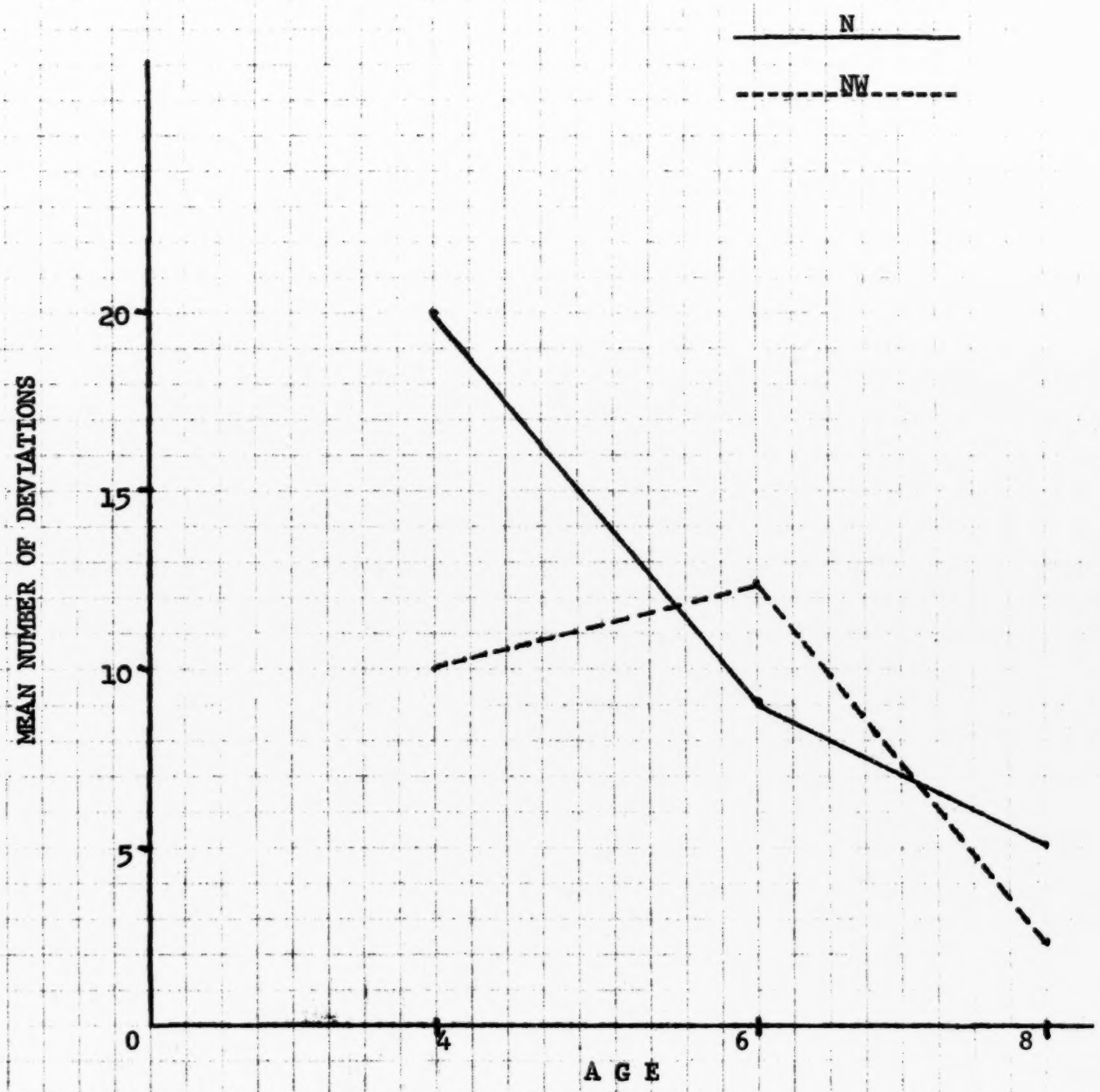

FIGURE 2. NUMBER OF DEVIATIONS

performance more than weaker reinforcer. If six-year-olds are conforming to obtain attention, love, or other positive reinforcers, then the nurturant teacher should produce superior performance because she is a more powerful reinforcing stimulus. It seems reasonable to believe that with an increase in age, a child will move from an avoidance type motivation to one characterized by positive reinforcement. Among eight-year-olds, however, the nurturance and nurturance withdrawal procedures are about equally effective suggesting that, at this age, the resistance to temptation may not be controlled by either of these specific operations. Perhaps among eight-year-olds a more intrinsically based motivation is operating, i.e., their behavior is under the control of other reinforcers. An alternate explanation may be that their performance under temptation has already been largely shaped and maintained so that specific operations in the immediate context have less impact.

In summary, it is proposed that the resistance to temptation behavior in this temptation situation is controlled by different motivational factors for these three age groups. Resistance to temptation is viewed as a form of either escape or avoidance learning among the youngest age group. Next, resistance to temptation is seen as instrumental behavior engaged in to secure positive reinforcement, love, attention, etc., from the teacher. In the oldest age group, obedience to rules will have had a more extensive and systematic history of reinforcement. Accordingly, these older children would be less influenced by specific environmental influences such as the nurturance of the teacher. Their resistance to temptation behavior should have more "habit strength" as a result of more extensive reinforcement history; therefore, they deviated less than the younger children who have not yet developed a consistent or relatively strong response in a temptation situation.

Parke (1967) has discussed the importance of obtaining information about factors affecting resistance to temptation. It appears, however, that additional information may result in considerably more ambiguity about the motivational factors behind behavior in moral situations. This experiment indicates that the reactions of children to at least one nurturance and nurturance withdrawal operation which influences resistance to temptation depends on age or factors associated with the age of the child.

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